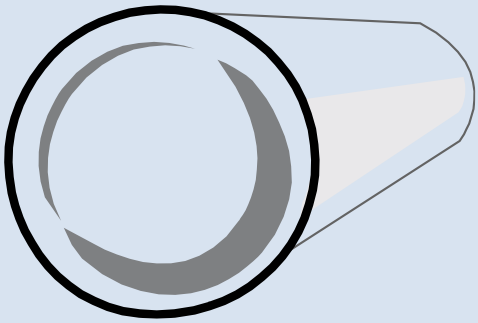
Collection



What We Do

King County is working to design wastewater pump stations that blend with or enhance their neighborhoods.

King County's conveyance system includes the pipelines, pump stations and force mains that transport sewage to the regional treatment plants. The facilities include the following:

- 42 pump stations
- 19 flow regulator stations
- more than 275 miles of county sewer lines.

The county's sewer pipes range in diameter from 12 inches to 12 feet, and the oldest was built in 1906.

But King County's aging system needs maintenance that includes inspection, cleaning and fixing to preserve capacity. Much of it built 40 years ago, parts of the system also need rehabilitation and replacement to prevent failures that could result in overflows or backups.

In addition, the Wastewater Treatment Division designs and installs odor and corrosion control measures to protect the integrity of the system and be a good neighbor. The WTD also must provide increased sewer capacity to accommodate population growth.

What We've Done

Reducing Combined Sewer Overflows (CSOs)

The lush, green Puget Sound area is blessed with much rainfall. But in some areas of Seattle, that rain is a mixed blessing. Like many cities across the nation, Seattle still has combined sewers dating from the early 1900s that collect both sewage and stormwater runoff. During heavy storms, those combined flows are discharged through sewer outfalls into Puget Sound, Lake Washington, the ship canal and Duwamish River.

The WTD is working closely with the City of Seattle (Seattle Public Utilities) on a $140 million project to control discharges of combined sanitary sewage and stormwater now released into Lake Union and Elliott Bay during storms.

Depending on rainfall, untreated CSOs are discharged into Lake Union from 10 to 115 times a year. They are discharged about 50 times a year into Elliott Bay at Myrtle Edwards Park. When the CSO control project is completed, untreated discharges will be nearly eliminated—an average of only once a year at each remaining CSO outfall location in the project area.

Building Mercer Street Tunnel

The Denny Way CSO project includes construction of a 6,200-foot tunnel, new pipelines in Myrtle Edwards Park, two new outfalls in Elliott Bay, new pipelines in the south Lake Union area and a new CSO control facility on Elliott Avenue West. Construction began in June 2000 and will be finished in 2004.

Mercer Street tunnel breakthrough in March 2002.

Mercer Street CSO tunnel is 15 feet in diameter.

When the CSO project is complete, the Mercer Street tunnel will provide 7.2 million gallons of storage and treatment capacity for combined sewage and stormwater. During dry weather, the tunnel will be empty and flows will travel through the existing conveyance system to the West Point Treatment Plant. As flows rise during storms, diluted wastewater will be diverted into the tunnel so overflows to Lake Union and Elliott Bay will occur only once per year during extreme storms.

Adding Capacity in South County

With all the recent growth above ground in south King County, the WTD needed more room underground for piping sewage from homes and businesses to the regional wastewater treatment plant in Renton.

So in March 2000, the division began building a 3-mile-long sewer line serving south King County. Completed in May 2002, the new south interceptor runs parallel to a

line built in the 1960s. It is now one of the largest connecting sewer lines in south King County.

The 9-foot-diameter line increases the system's capacity to convey and store wastewater and reduces the likelihood of overflows. It also will help prevent backups into homes and businesses and into sensitive environmental areas.

In 2002, the $28 million project was the fourth largest active public construction project in the state.

This project is an example of King County's efforts to minimize detrimental construction impacts. The contractor is hauling materials from the site at night so the activity does not disrupt the surrounding commercial area. And the area over the underground tanks will become sports fields.

The North Creek Pump Station in Bothell is one of King County's newest facilities.

Building Storage in North County

Population growth in north King County and south Snohomish County is also requiring new construction: an underground facility to store 6 million gallons of excess wastewater.

Construction of the 200-foot-wide North Creek storage tank in Bothell began in November 2001. The facility, 15 feet underground, will be ready for use during major storms in 2004.

Restoring Lost Capacity

The division began a sewer improvement project in downtown Renton in November 2001 to restore lost capacity to the pipeline that carries wastewater from Eastside communities to the South Treatment Plant in Renton. Lost capacity was the result of repairs following the 1965 earthquake.

King County worked closely with the City of Renton and residents in the immediate construction area to reduce the impacts of noise, vibrations, truck traffic and street closures during the 10-month construction project.

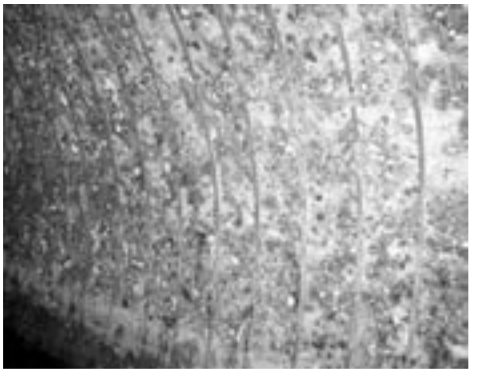
Relining Corroded Pipes

One example of system rehabilitation is installation of a new lining inside the north portal access to the Lake City sewer tunnel running from the Matthews Park Pump Station to the University District.

The new liner, installed in mid-2002, replaces concrete corroded by years of exposure to wastewater flows and hydrogen sulfide gas.

24/7

Sewer pipe diameters from 12 inches to 12 feet.



Years of exposure to wastewater and hydrogen sulfide gas have exposed reinforcement bars in some sewer pipes.

A construction worker applies part of the plastic liner inside a corroded sewer pipe.

What's Ahead

Cleaning Duwamish Waterway
Working with the City of Seattle, Port of Seattle and Boeing Co., the WTD is identifying sites for early action cleanup in the Lower Duwamish Waterway. The Lower Duwamish has been listed as a Superfund site by the U.S. Environmental Protection Agency. They plan to spend $8.9 million to clean one site in 2003-2004.

Controlling Lake Washington Overflows
The major element of the Henderson/M.L. King CSO Project: building a $45 million, 2-mile-long sewer line and tunnel from Lake Washington to the Duwamish River.

During storms, the 3,100-foot-long tunnel will hold combined stormwater and sewage until the flows can reach King County's wastewater treatment plants in Renton and Seattle.

Designing New Pump Stations
In 2002, the utility began predesign for a new pump station to replace an existing station in the Juanita area of Kirkland. The larger facility will accommodate projected growth in the area. Pump station improvements planned for Juanita provide an example of other improvements planned around the county.

The Juanita Bay Pump Station is next to a densely developed residential area across the street from a park. It's also near sensitive environmental areas, including Juanita Creek and Lake Washington.

So King County is working with the City of Kirkland and nearby community to get comments on landscaping and architectural measures to help the station blend with its surroundings and minimize impacts on neighbors.